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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,327	12/02/2003	Katsura Ito	Q78609	2696

7590 03/06/2006

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EXAMINER
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NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/725,327	ITO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cam N. Nguyen	1754	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/28/05 (an amendment/response & RCE).
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3 and 5-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-3 & 5-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Response to status of an RCE application**

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after the final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 12/28/05 has been entered.

### **Response to Amendment**

2. Applicants' amendment and remarks, filed December 28, 2005, has been made of record and entered. Claims 1 & 4 have been canceled. Claims 2 & 5 have been amended.

Claims 2-3 & 5-19 are currently pending and under consideration.

### **Claim Rejections - 35 USC § 102(e)**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2-3 & 6-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sanbayashi et al., "hereinafter Sanbayashi", (US Pat. 6,479,141 B1).

Sanbayashi discloses a photocatalytic titanium dioxide coating composition comprising (a) finely-divided titanium dioxide particles exhibiting photocatalytic activity, (b) particles of an inorganic compound other than titanium dioxide, or particles of an organic compound convertible to particles of an inorganic compound on firing, (c) a binder, and (d) a solvent, characterized in that the particles of an inorganic compound have an average particle diameter which is larger than that of the finely divided titanium dioxide particles, etc. (see col. 9, claim 1). The finely divided titanium dioxide particles have an average particle diameter of about 0.004  $\mu\text{m}$  to about 0.1  $\mu\text{m}$  (see col. 9, claim 2). The particles of inorganic compound are particles of at least one compound selected from a group consisting of aluminum oxide, silicon oxide, zinc oxide and zirconium oxide (see col. 9, claim 3). See also col. 9, claim 4 regarding the organic compound. The binder is a zirconium-containing compound or phosphorus-containing compound (see col. 9, claim 5). The phosphorous-containing compounds are those including phosphoric acid, polyphosphoric acid and aluminum phosphate (see col. 10, claim 14). Sanbayashi further discloses that the finely titanium dioxide particles having the brookite type crystalline structure is preferable (see col. 3, ln 13-18).

Even though Sanbayashi is silent with respect to the electrokinetic potential value of his coating composition, it is inherent and expected that the same composition would possess the same electrokinetic potential value.

There is no patentable distinction seen between the claimed coating composition and that disclosed by Sanbayashi, thus the claims are anticipated by the teaching of the reference.

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanbayashi et al., "hereinafter Sanbayashi", (US Pat. 6,479,141 B1).

Sanbayashi discloses a catalyst coating composition as described above, except for the titanium dioxide fine particles being a composite crystal-system of anatase and brookite.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have controlled the heating temperature during the process of preparing the composition in Sanbayashi in order to achieve the desired titanium dioxide crystal structure, such as the claimed anatase and brookite composite crystal-system being claimed, because the crystal structures are heating temperature dependent. Also, heating temperatures is considered one of the parameters that are results effective variables in view of In re Boesch.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanbayashi et al., "hereinafter Sanbayashi", (US Pat. 6,479,141 B1), as applied to claims 2-3 & 6-18 above, and further in view of Suzuki et al., "hereinafter Suzuki", (US Pat. 5,965,479).

Sanbayashi discloses a catalyst coating composition as described above, except for the activated carbon and/or zeolite.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated such known activated carbon into the coating composition of Sanbayashi to achieve an improved coating composition having enhanced in removing efficiency of harmful substances, as evidenced by Suzuki (see Suzuki at col. 1, ln 19-24). Specifically, Suzuki fairly discloses an activated carbon consisting essentially of activated carbon particle and titanium dioxide fine particles having an average particle size of not more than 10 um, and containing a suitable binder, including thermosetting resins and the like (see Suzuki at col. 12, claim 1 & col. 8, ln 18-34).

#### **Response to Arguments**

8. Applicants' amendment/response filed on December 28, 2005 has been fully reconsidered, but not deemed persuasive in view of the new ground of rejection above.

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**Conclusion**

9. Claims 2-3 & 5-19 are pending. Claims 2-3 & 5-19 are rejected. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 8:45 AM - 5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn   
March 01, 2006

  
CAM N. NGUYEN  
PRIMARY EXAMINER

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